

Matching Approaches and Needs:

Synergies in the National Climate and Coral Programs

Mary Glackin

**Assistant Administrator for Program Planning and Integration
and Acting Director, NOAA Climate Program**

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Climate and Corals

Key Issues, Common Approaches

- Global climate change is a capstone issue for our generation and coral reefs are sensitive ecosystems with climate implications
- Important synergies between these National programs
 - Structure of programs
 - Common approaches and needs
 - Opportunities for partnerships and integration

Climate and Corals

National Programs

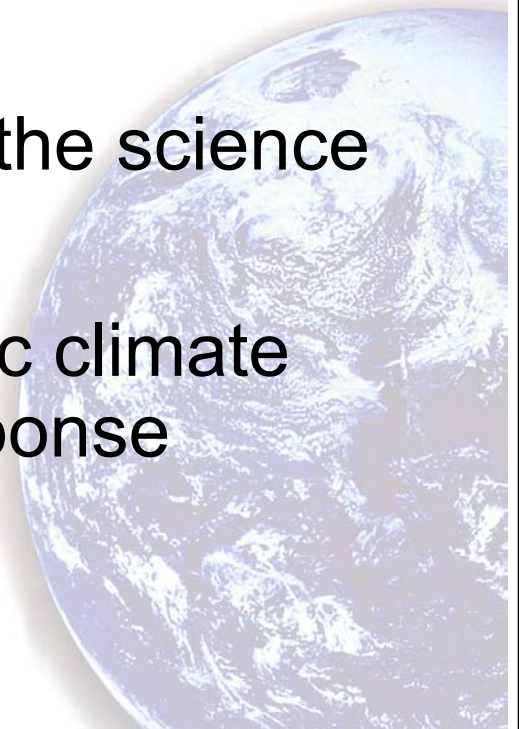
- Climate Change Science Program
 - Strategic Plan
 - Focus on application of research to management challenges
- U.S. Coral Reef Task Force
 - Puerto Rico Resolution named climate and bleaching as a priority threat
 - Corals and Climate Resolution calling for public/private partnerships to address research and management needs

U.S. Climate Change Science Program

U.S. Climate Change Science Program

Approach

- Global climate change: a capstone issue for our generation
- Major new technology is needed
- More complete understanding of the science is required
- Accelerate the application of basic climate research to the evaluation of response strategy options

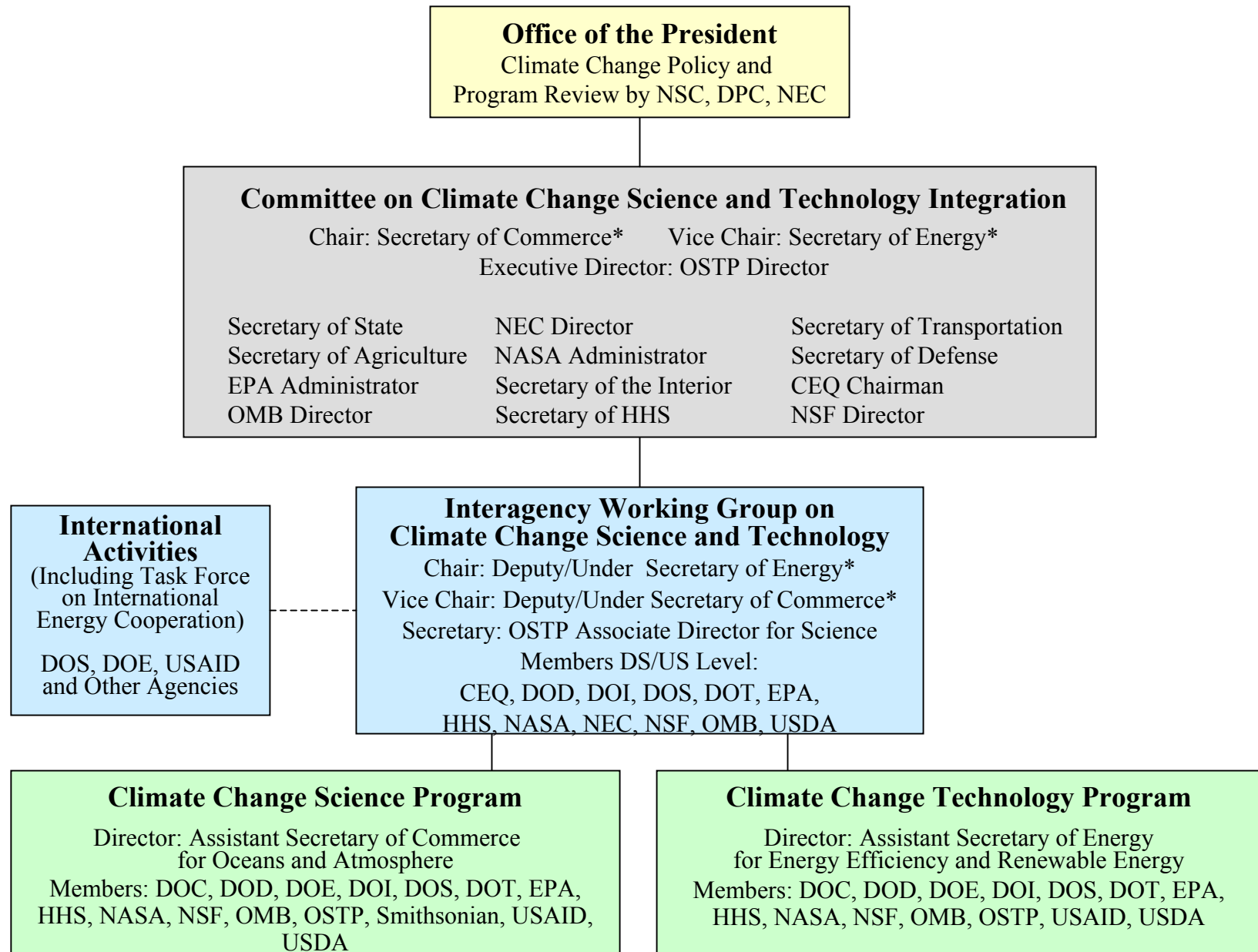


U.S. Climate Change Science Program History

- U.S. Global Change Research Program (USGCRP):
1987 and 1990
- President Bush announces Climate Change
Research Initiative (CCRI)
June 11, 2001
- President Bush announces U.S. Climate Change
Science Program, incorporating USGCRP and CCRI
February 14, 2002



Climate Science and Technology Management Structure



*Chair and Vice Chair of Committee and Working Group rotate annually

U.S. Climate Change Science Program

Four part focus

1. Science
2. Observations and Data
3. Decision Support
Resources
4. Communication and
Education



U.S. Climate Change Science Program

Time Line

- Ongoing research and observations
- Draft Strategic Plan, November 2002
- Broad community review of Strategic Plan at workshop, December 2002
- Individual comments received on web site until January 18, 2003
- First National Research Council (NRC) Report issued, February 25, 2003
- Completion of Strategic Plan, June 25, 2003
- Ongoing implementation and reporting



U.S. Climate Change Science Program

Guidelines

1. Question-based strategic plan
2. Integration of USGCRP and CCRI
3. Combined scientific community and stakeholder review
4. Policy relevant and policy neutral standards
5. Transparency and comprehensiveness standards
6. Reporting of basis and degree of certainty in findings



U.S. Coral Reef Task Force

U.S. Coral Reef Task Force

Approach

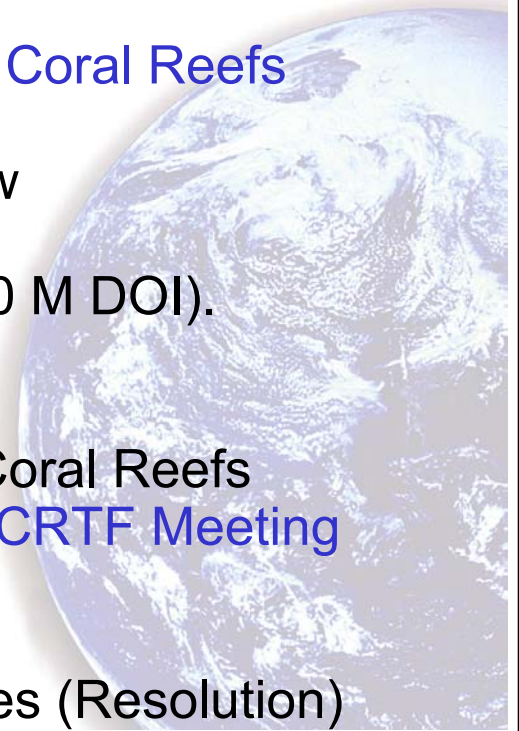
- Outline a strategy for national and international leadership on climate/bleaching in the National Action Plan for Coral Reef Conservation
- Support local and regional management and research
- Foster public-private partnerships



U.S. Coral Reef Task Force

History

- 1994 International Coral Reef Initiative established
All Islands Coral Reef Initiative established
- 1997 International Year of the Reef
- 1998 Executive Order 13089 creates U.S. Coral Reef Task Force
- 2000 1st U.S. National Action Plan to Conserve Coral Reefs
New funding for coral reefs (\$6 M NOAA)
Coral Reef Conservation Act becomes law
- 2001 Funding for coral reefs (\$27 M NOAA; \$10 M DOI).
- 2002 Funding (\$28 M NOAA; \$10 M DOI)
1st National Action Strategy to Conserve Coral Reefs
Puerto Rico Resolution Passed at Oct USCRTF Meeting
- 2003 Funding (\$26 M NOAA; \$10 M DOI)
Develop, implement Local Action Strategies (Resolution)



U.S. Coral Reef Task Force

Local Action Strategies

3-year, local level “work plans” outlining goals, objectives and specific projects to address 6 key threats to coral reef ecosystems

- Land-based Sources of Pollution
- Overfishing
- Lack of Public Awareness
- Recreational Overuse
- Climate Change and Coral Bleaching
- Disease

Climate and Corals: Common Approaches

Climate and Corals

Common Approaches

- Emphasis on interdisciplinary tools, information and technology
- Focus on communication and education
- Support for management at local to regional scales
- Reliance on collaboration to increase efficiency

Emphasis on Interdisciplinary Tools, Information and Technology

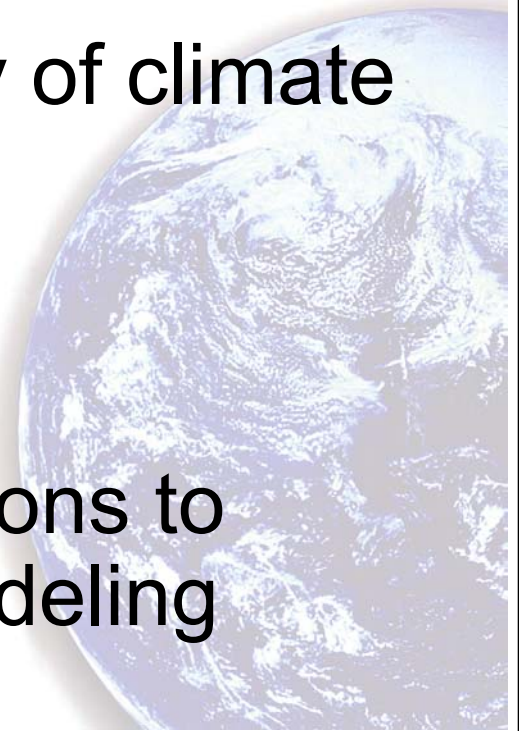
Some Examples

Corals – Coral Reef Watch

Climate – Reduce uncertainty of climate
predictions

Opportunities ?

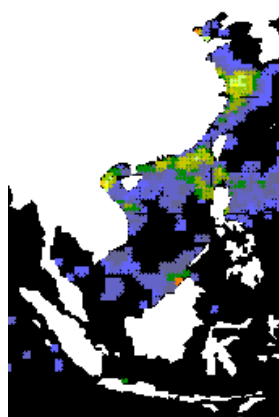
Application of climate predictions to
facilitate coral resiliency modeling





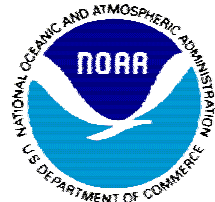
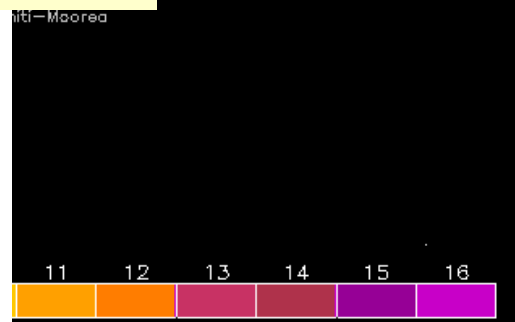
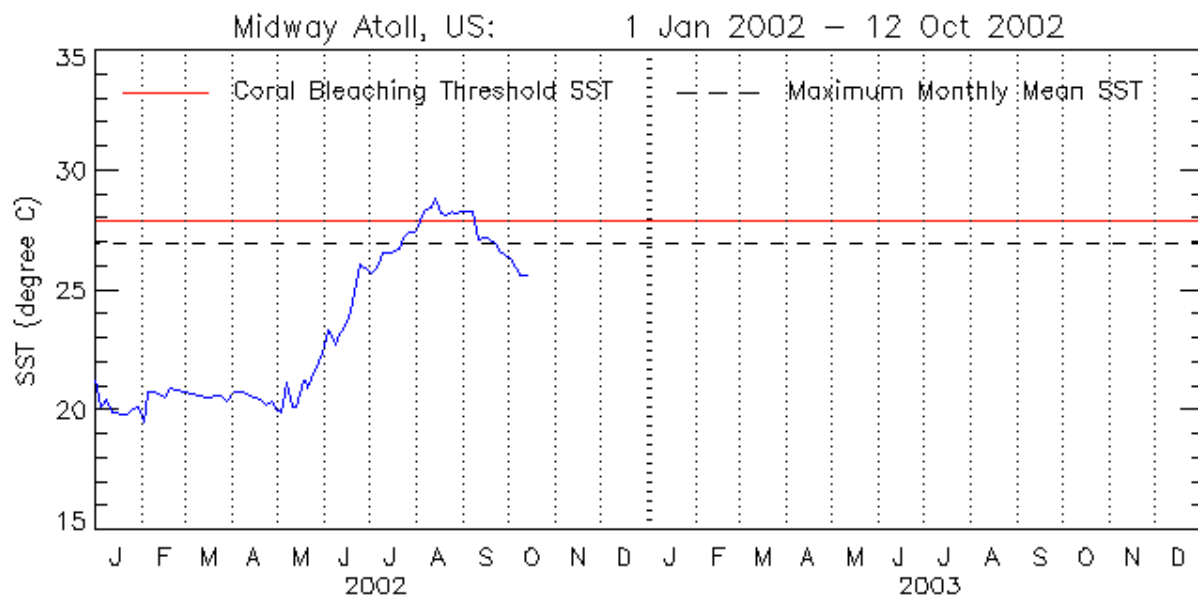
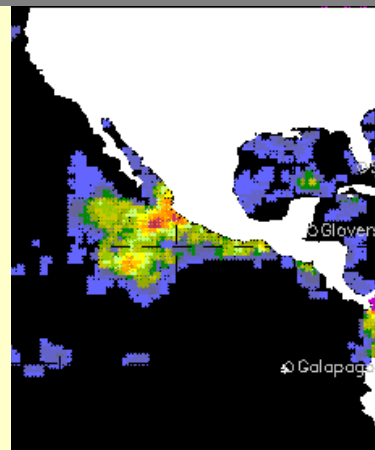
Coral Reef Watch - NESDIS

Degree Heating Weeks for 7 September, 2002

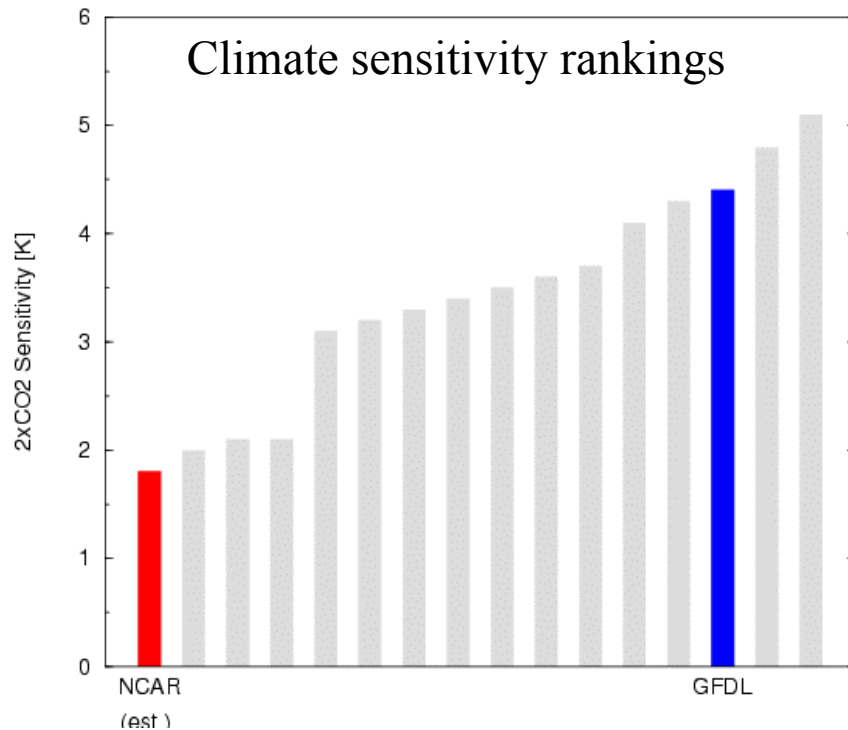


**Thermal Stress at Midway
Started 1st August
Stopped 7th September**

**NESDIS Bleaching Warning
issued 7th August**

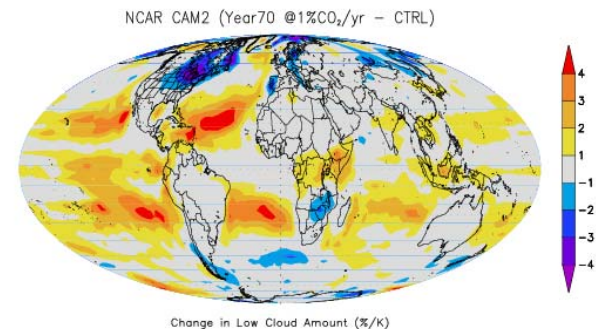
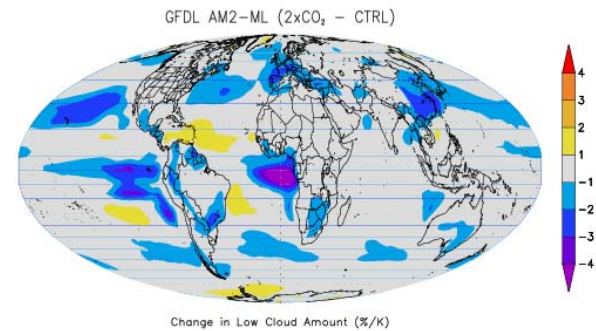


A major challenge is narrowing the range of uncertainty in climate projections



state-of-art models differ significantly

Low level cloud changes at 2xco2



Differences will be resolved through intercomparisons with observations

Focus on Communication & Education

Some Examples

Corals – Focus on addressing “lack of awareness” in Local Action Strategies

Climate – Application of climate information to water resources management

Opportunities ?

Use bleaching events opportunistically to raise awareness related to climate change and coral degradation broadly



Support for Management at Local to Regional Scales

Some Examples

Corals – Develop Local Action Strategies

Climate – Improve adaptability at the regional scale

Opportunities ?

Increase decision support, management-relevance of science thru connection with on-the-ground needs

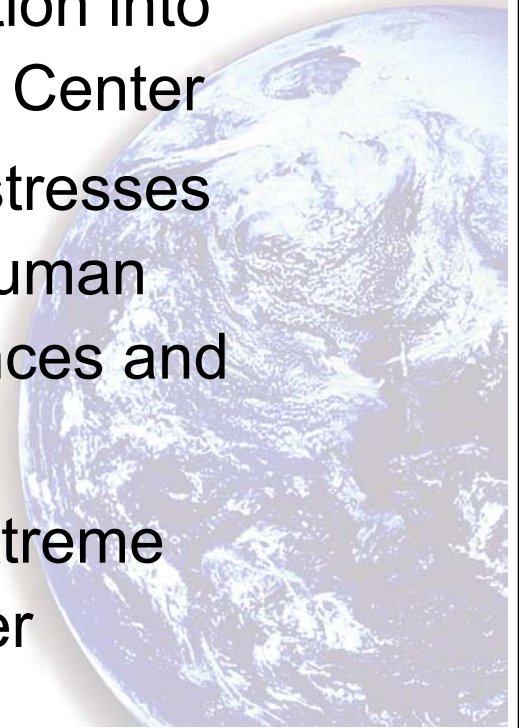


Call for Local Action Strategies

- **3-year, local level “work plans”** outlining goals, objectives and specific projects to address 6 key threats to coral reef ecosystems.
- **Strategic not comprehensive** (implement parts of existing plans e.g., CZM, non-point source)
- **Collaborative** road maps developed jointly by state, territory, federal, and non-governmental partners.
- Tool to **increase coordination** and collaboration.
- Tool to **increase support and effectiveness** on-the-ground action to sustain reef resources.

NOAA Experiences at Improving Adaptability at the Regional Scale

- Promoting wise use of coastal and marine resources – e.g. Sea Grant
- Promoting flexible management approaches through integration of climate information into planning – Pacific ENSO Applications Center
- Multidisciplinary research in multiple stresses (rainfall, temperature, sea level and human activities) – Regional Integrated Sciences and Assessments Program
- Documenting long-term trends and extreme events – National Climatic Data Center



Focus on Partnerships

Some Examples

Corals – Corals and Climate Resolution calling for public-private partnerships:

“for planning a comprehensive, integrative program for understanding local and system-wide coral reef responses to climate change, including its application of this knowledge for local reef management.”

Climate – Pacific ENSO Applications Center – translating ENSO information to planning and management information for Pacific Islands

Opportunities ?

Build partnerships for efficient solutions



Climate and Corals: Opportunities for Partnerships and Integration

NOAA Strategic Plan

Climate is one of four major goals:

Understand Climate Variability and Change to Enhance Society's Ability to Plan and Respond

Achieved by:

- Investing in needed climate quality observations and encouraging other national and international investments.
- Working with national and international partners to increase understanding of the dynamics and impacts of coupled atmosphere/ocean/land systems.
- Improving its intraseasonal to interannual climate forecasts to enable regional and national managers to plan better for the impacts of climate variability.
- Providing improved regional, national, and international assessments and projections of climate change to support policy decisions with objective information.
- Working with users of climate information to enable and increase the application of climate information.



NOAA anticipates further interactions
based on...

- Outcomes of this workshop
- Management needs articulated through
Local Action Strategies